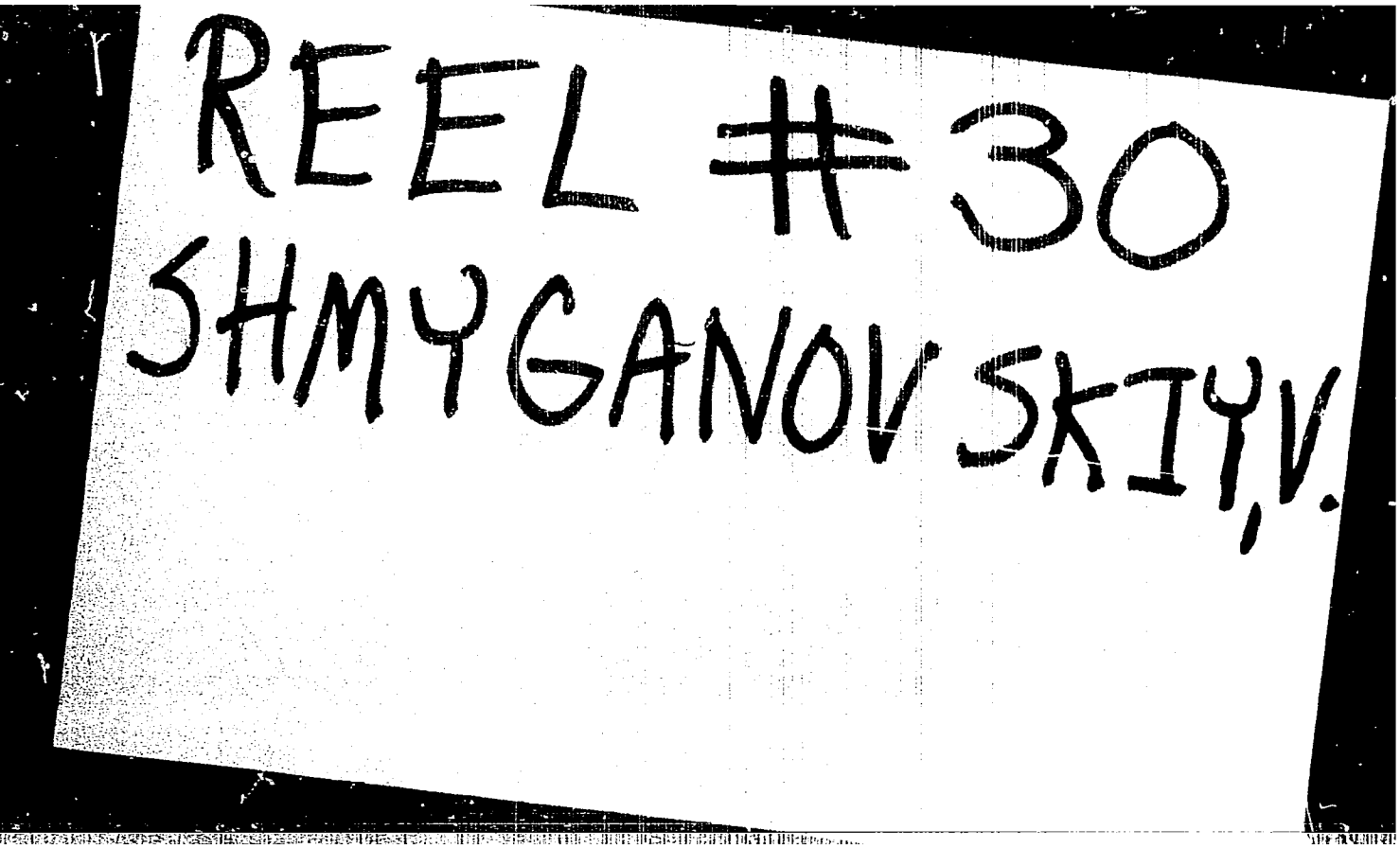

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RIGORS OF LIFE IN ANTARCTIC STATION DESCRIBED

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Moscow IZVESTIYA 28 Jan 70 Morning Edition p 4 L

[IZVESTIYA special correspondent V. Shmyganovskiy article: "Where the Meridians Meet"]

[Text] I have never seen such a large map of the sixth continent: it occupies almost the eintire wall in the study of the deputy chief of the Arctic and Antarctic Scientific Research Institute, Ye. Korotkevich. I have never seen a map more...empty --without particular details of relief or the usual circles of populated points. But how many flags are on it, signifying scientific stations--Soviet, American, Japanese, Chilean, Argentinian, French. Antarctica is faithfully serving world science.

Here, at the most southerly point of the planet, all roads lead north. In all senses, geographic and natural, this is the edge of the world. The scientists call conditions under which members of Antarctic expeditions live and work extreme. In comparison with these regions the severe Arctic at times appears on oasis in the desert, for the minimum temperature at the North Pole is 20 to 30 degrees higher than at the South Pole, which is above sea level. Everyone who comes here for the first time recalls

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the words of Robert Scott, who died tragically: "What a terrible place!"

However, for polar specialists Antarctica has become a fully established home. Many of them have spent several difficult years here. The 14th Soviet expedition has completed its winter stay. My first question to Ye. Korotkevich was on the results of its work.

"The main results will be known later, on the expedition's return," Yevgeniy Sergeyevich said. "I can only say that it completely fulfilled its task. Mastering Antarctica, generally speaking, is an everyday process, flowing on with no particular sensations. The winterers made standard observations which had also been carried out before them. It is true that we have now begun to probe the atmosphere's upper layers with the help of meterological rockets. Molodezhnaya station has become unrecognizable. The rocket complex occupies four buildings and a gantry, and a large radio center is being constructed here. A new laboratory has been equipped for reception of information from meteorological satellites. Molodezhnaya is altogether developing as the main base for our Antarctic research.

"One of the main tasks of the present, 15th expedition is to study the Oates Coast (East Antarctica) in detail in order to determine a site for a new station. It has been decided to call it Leningradskaya. Drilling into the glacial covering will continue at Vostok. Radio-locational sounding of the thickness of glaciers from airplanes has proved effective."

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Ye. Korotkevich's account is well supplemented by daily reports from the sixth continent. These short radio reports give a picture of the hard, strenuous work, although the objects of the observations may be very unusual. Here, for example, is a report that in connection with the end of the season observation of Eurora Polaris and silver clouds has ceased. From Molodezhnaya station they are transmitting on the study of the wind in the atmosphere's upper layers by means of radio-location of meteor trails. Radar tracking of meteors takes place at the same time as rocket launches into the circumterrestrial strata of the atmosphere. Even scarcely perceptible deviations of meteor traces enable the direction of movement of ultrahigh winds to be judged.

Several more reports. At Molodezhnaya an external point has been equipped for carrying out experimental work on measuring a glacier's speed of movement with the use of a laser. Sensitive instruments will enable the most restrained breathing of glaciers to be perceived, their "budge" to be determined more accurately, and the appearance of new "squadrons" of icebergs to be calculated. Polar explorers are testing the heat-conserving properties of clothing with electric heating.

Scientific observations are the main thing, but still not everything which makes up the life of the winterers. They have many diverse cares, economic and domestic. In many radiotelegrams one encounters reports about the caterpillar-sledge train

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of engineer Ye. Zimin, who recently carried goods and fuel from Mirnyy to Vostok. There were 14 of them: driver-mechanics, navigator, radio operator, welder, specialist on Eurora Polaris, doctor, telegraphist, and cook. "An ordinary business," they say. Long before the almost 1,500-kilometer trip the participants in it convey part of the goods some way from Mirnyy, beyond the dangerous 150-kilometer zone which abounds in fissures. The road here is marked by stakes. The caravan proceeds further on the navigators's instructions.

In the reports one can also see an account of how an adelie penguin visited Novolazarevskaya station and how Skuas hatched out two fledglings. In view of the scarcity of the continent's animal life, it appears that all winterers are obliged to report such details.

And what happens at Antarctica's warmest "resort" station, situated on Waterloo Island and bearing the name of one of the continent's discoverers, F. Bellvingshausen? Here the sky is almost always covered with vast clouds, and there are only two of three cloudless days in the entire year. After snowstroms it is possible to drive down drifts several dozen meters high in an all-purpose vehicle.

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USSR

BRANETS, V. N. and SHMYGLEVSKIY, I. P.

"A Kinematic Problem of Orientation Within a Rotating System of Coordinates"

Moscow, Mekhanika Tverdogo Tela, No 6, Nov-Dec 72, pp 36-43

Abstract: The conditions of stability of the process of orientation in a rotating system of coordinates are investigated. A study is made of the kinematic problem of orientation, it being assumed that control is obtained due to a change of the angular-velocity components of the oriented system of coordinates. An investigation is made of the processes of transformation when the operation is conducted on the basis of two control signals. 3 references.

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1/2 053 UNCLASSIFIED PROCESSING DATE--27NOV70
TITLE--CONTROL OF SPACE VEHICLE RENDEZVOUS AT THE STAGE OF DOCKING -U-

AUTHOR-(02)-LEGOSTAYEV, V.P., SHMYGLEVSKY, A.P.

COUNTRY OF INFO--USSR, FRANCE

SOURCE--AUTOMATIC CONTROL IN SPACE, 3RD I F A C SYMPOSIUM, TOULOUSE, FRANCE, MARCH 2ND-6TH, 1970
DATE PUBLISHED-------70

SUBJECT AREAS--SPACE TECHNOLOGY, NAVIGATION

TOPIC TAGS--SPACECRAFT RENDEZVOUS, SPACECRAFT CONTROL/(U)COSMOS 213 SATELLITE, (U)COSMOS 212 SATELLITE, (U)COSMOS 188 SATELLITE, (U)COSMOS 186 SATELLITE, (U)SOYUZ 5 MANNED SPACECRAFT, (U)SOYUZ 4 MANNED SPACECRAFT, (U)SOYUZ 3 MANNED SPACECRAFT, (U)SOYUZ 2 MANNED SPACECRAFT

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--3003/0044 STEP NO--FR/0000/70/000/000/0000/0000

CIRC ACCESSION NO--AT0129329
UNCLASSIFIED

2/2 053 UNCLASSIFIED PROCESSING DATE--27NOV70

CIRC ACCESSION NO--AT0129329

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE PAPER DESCRIBES A SPACESHIP CONTROL SYSTEM AT THE FINAL STAGE OF RENDEZVOUS USED IN EXPERIMENTS WITH "COSMOS 186-188, 212-213 SATELLITES AND "SOYUZ 2-SOYUZ 3", "SOYUZ 4-SOYUZ 5" VEHICLES. THE SYSTEM INCORPORATES RADIO EQUIPMENT GYRO DEVICES, LOGICAL CONTROL UNITS; LOW THRUST ENGINES, ETC. NEW EQUATIONS HAVE BEEN DERIVED WHICH DESCRIBE THE DISPLACEMENT CENTER OF MASSES IN SPACESHIPS AND THEIR ROTATION ABOUT THE CENTER BASSES. THE MANEUVERING OF VEHICLES IN IMMEDIATE PROXIMITY TO EACH OTHER IS DISCUSSED. THEORETICAL RESULTS ARE COLLATED WITH THE DATA OF INFLIGH TESTS.

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USSR

BEZHKO, A. P., BRANETS, V. N., ZAKHAROV, YU. M., SHMYGLEVSKIY, V. P., Moscow

"Application of Quaternions in the Theory of Finite Rotation of a Solid State"

Moscow, Izvestiya Akademii Nauk SSSR, Mekhanika Tverdogo Tela, No 1, January-February 1971, pp 123-134

Abstract: In this article the basic results of the theory of finite rotation of a solid state obtained in the form of formal operations on hypercomplex numbers (quaternions) are presented. New results are obtained for the addition formulas of finite rotations defined by the Rodrig-Hamilton parameters. A generalization of the known theorems of finite rotation theory is presented, and the correctness of the form of addition of rotations when summing relative motions is demonstrated. The application of quaternions makes it possible easily to obtain all the basic results of the theory of finite rotations and, in addition, to describe the position of the solid state in terms of nondegenerate kinematic parameters.

In a number of problems the angular position of the solid state is defined by solving the kinematic equations on a digital computer. The selection of the kinematic parameters affects the calculations significantly in

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BEZHKO, A. P., et al., Izvestiya Akademii Nauk SSSR, Mekhanika Tverdogo Tela, No 1, January-February 1971, pp 123-134

this case, and for this reason the Rodrig-Hamilton parameters are advantageous. These parameters do not degenerate for any position of the solid state and they are convenient for use in a control system; there is only one coupling equation when these parameters are used, which simplifies the numerical solution of the kinematic equations. Use of the quaternions follows from use of the Rodrig-Hamilton parameters.

1/2 046 UNCLASSIFIED PROCESSING DATE--27NOV70

TITLE--SPACE RENDEZ-VOUS TERMINAL PHASE CONTROL -U-

AUTHOR-(02)-LEGOSTAEV, V.P., SHMYGLEVSKY, Y.P.

COUNTRY OF INFO--USSR

SOURCE--3RD IFAC SYMPOSIUM ON SPACE CONTROL, TOULOUSE, FRANCE, MARCH 1970

DATE PUBLISHED--------70

SUBJECT AREAS--SPACE TECHNOLOGY, NAVIGATION

TOPIC TAGS--ARTIFICIAL EARTH SATELLITE, RENDEZVOUS SPACECRAFT, MANUAL CONTROL, AUTOMATIC CONTROL/(U)SOYUZ 5 MANNED SPACECRAFT, (U)SOYUZ 4 MANNED SPACECRAFT, (U)SOYUZ 3 MANNED SPACECRAFT, (U)SOYUZ 2 MANNED SPACECRAFT, (U)COSMOS 213 SATELLITE, (U)COSMOS 212 SATELLITE, (U)COSMOS 188 SATELLITE, (U)COSMOS 186 SATELLITE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--3008/1920 STEP NO--FR/0000/70/000/000/0000/0000

CIRC ACCESSION NO--AT0138787

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2/2 046 UNCLASSIFIED PROCESSING DATE--27NOV70

CIRC ACCESSION NO--AT0138787

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THIS PAPER CONCERNS THE AUTOMATIC AND MANUAL SYSTEM OF THE TYPE USED TO DOCK THE COUPLES "COSMOS 186", "COSMOS 188", "COSMOS 212", "COSMOS 213", "SOYUZ 2", "SOYUZ 3", "SOYUZ 4", "SOYUZ 5". THE AUTOMATIC RENDEZVOUS AND DOCKING PROCEDURE CONSISTS IN FOUR STAGES (FIG. 1): THE FIRST STAGE IS THE LAUNCHING OF BOTH SATELLITES (SIMULTANEOUS OR CONSECUTIVE) INTO THE EARTH'S ORBIT THE CORRECTION OF ONE OF THE SATELLITES' TRAJECTORY TO DEFLECT IT INTO THE APPROPRIATE RANGE FOR MUTUAL AUTOMATIC RADAR.CONTACT AND RADIO ENGAGEMENT. THE SECOND STAGE IS AUTOMATIC APPROACH WHEN ONE OF THE SATELLITES TERMED "ACTIVE" APPROACHES ITS PASSIVE COMPANION WITH THE HELP OF A CORRECTING ENGINE. THE CLOSING RANGE BETWEEN THE TWO SPACECRAFT IS ABOUT 300-400 METERS. THE THIRD, TERMINAL STAGE IS THE AUTOMATIC RENDEZVOUS WHEN BOTH SATELLITES MEET AT RELATIVELY LOW VELOCITIES UNTIL THE DOCKING UNITS CONTACT. THE FOURTH PHASE IS DOCKING PROPER WHEREBY THE SPACE VEHICLES ARE LINKED UP MECHANICALLY AND ELECTRICALLY. IN FURTHER DISCUSSION WE WILL BE CONCERNED WITH THE 3RD STAGE ALONE BECAUSE THE FIRST ONE DOES NOT COME INTO THE SCOPE OF THIS PAPER.

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USSR UDC 632.95+661.718.1:632.95

SHMYGLYA, V. A., and SHOROVA, R. CH., Scientific-Research Institute of the Potato Industry; (Consultation with Dr. of Agricultural Sciences P. V. Sazonov)

"Effectiveness of Organophosphorus Preparations Against Aphids-Carriers of Potato Viruses"

Moscow, Khimiya v Selskom Khozyaystve, No 2, 1971, pp 26-27

Abstract: During 1968-1969 tests were run in the central part of the RSFSR, where potato plants are often attacked by viruses M and U. Infected plants were sprayed with several different organophosphorus compounds (mainly Syphos and phosphamide), or raised in soil treated with those compounds; these infected plants were tested against an untreated control group, also infected. Relative degree of infection dropped radically between 1968 and 1969, as a result of use of the insecticides referred to (by factors of 4 -7, as compared with the control group).

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USSR

SHMYREV, V. I.

"Effective Algorithms for One Class of Nonlinear Programming Problems"

Sb. tr. In-t mat. Sib. otd. AN SSSR [Collected Works of Mathematics Institute, Siberian Division Academy of Sciences USSR], No 1(18), 1971, pp 118-133, (Translated from Referativnyy Zhurnal, Kibernetika, No 3, 1972, Abstract No 3 V414 by S. Lebedev).

Translation: A diagram of a method described in an article by G. Sh. Rubinshteyn and the author (Abstract 3 V413) is applied to problems where the goal function includes only four of n variables separably, and for clarity a special form of the goal function $f(x) = -\sum_{j=1}^{4} \ln x_j$. It is proven that the realization of each of the steps of the method of successive improvement of the plan involves minimization of a function of only one variable.

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USSR

RUBINSHTEYN, G. Sh., SHMYREV, V. I.

"Methods of Minimization of Quasiconvex Function in a Convex Polyhedron"

Sb. tr. In-t mat. Sib. otd. AN SSSR [Collected Works of Mathematics Institute, Siberian Division Academy of Sciences USSR], No 1(18), 1971, pp 82-117, (Translated from Referativnyy Zhurnal, Kibernetika, No 3, 1972, Abstract No 3 V413 by S. Lebedev).

Translation: Diagrams of finite methods of convex programming are described, based on directed sampling of the boundaries of a polyhedron, similar in their idea to those developed for linear programming problems. For example, an analogue of the method of successive improvement of a plan consists of the following: suppose the plan of a problem $x^{(k)}$ belonging to face $G(x^{(k)})$ is known. A point is sought which is minimal on $L(x^{(k)})$, the minimum linear manifold containing $G(x^{(k)})$. If there is no such point, the ray belonging to $L(x^{(k)})$ is found, along which the goal function decreases monotonically. A shift is made in the direction toward the point (or parellel to the ray) until the boundary of $G(x^{(k)})$ is reached or until the point is found, if it

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USSR UDC: 621.315.3

CHUKIN, D. A., BOBYLEVA, T. M., SHMYREVA, M. F., SIVAKOV, P. M.

"Investigation of the Stability and Heat Resistance of Microwires"

Elektron. tekhnika. Nauchno-tekhn. sb. Radiokomponenty (Electronic Technology. Scientific and Technical Collection. Radio Components), 1970, vyp. 1, pp 66-76 (from RZh-Radiotekhnika, No 5, May 71, Abstract No 5V417)

Translation: The paper outlines the results of investigations of the stability of electrical properties of microwires during aging under natural conditions and under high-temperature conditions. Empirical relationships are given for the change in parameters. A graphic-analytical method is presented for predicting storage life. Resumé.

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Acc. Nr.: AM0106711 Ref. Code: UR0000

Gumen, V. F.; Moskalev, V. P.; Smirnova, L. N.; Shmyreva, M. M.

Step Regulators for Programmed Control of Hydraulic Presses (Shagovyye regulyatory dlya programmnogo upravleniya gidropressami) Leningrad, Nauka, 1970, 82 pp (SL:2076)

TABLE OF CONTENTS:

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Acc. Nr.: AM0106711

The book deals with laws in control of extrusion rates of aluminum alloys on hydraulic presses. Given are methods for design and calculation of programmed regulators for realization of these laws, as well as comparative evaluations of methods for investigation of dynamic properties of systems with step motors...

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UDC: 629.78.076.6

SHMYROV, A.S.

"Optimum Passage Between Common Plane Elliptical Orbits by Means of Tangential Impulse Applied at Apsedal Points"

Leningrad, Sb. Mekh. Upravlyayem. Dvizheniya i Probl. Kosmich. Dinamiki (Symposium on Guided Motion Mechanics and Cosmic Dynamics Problems), Leningrad University, 1972, pp 63-69 (from Referativnyy Zhurnal-Raketostroyeniye, 1973, Abstract No 4.41.124)

Translation: Numerical methods are developed and numerous analytical investigations are completed in order to solve the problem of optimum impulse passage between orbits. Solution of a particular case of the general problem, using sufficient conditions of optimum, is given. 1 illustration. 3 references. Author's resume.

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UDC 531.55:521.1

SHMYROV, A. S.

"Optimal Transition Between Coplanar Elliptic Orbits Using Tangential Pulses Applied at Apsidal Points"

V sb. Mekh. upravlyaem. dvizheniya i probl. kosmich. dinamiki (Mechanics of Controllable Motion and Problems of Space Dynamics -- collection of works), Leningrad, Leningrad University, 1972, pp 63-69 (from RZh--Mekhanika, No 6, Jun 73, Abstract No 6A62)

Translation: The characteristic speed of crossing between coplanar coaxial elliptic orbits is minimized. It is proposed that the initial, final and transitional orbits lie inside the ring A formed by circles with radii a_1^{-1}, a_2^{-1}, ($a_1 << 1$, $a_2 >> 1$). By using the current characteristic velocity as the independent variable in the active sections of the trajectory, the author arrives at the problem of the optimal (with respect to speed) reduction of the phase point (r_+^{-1}, r_-^{-1}) of the region A to the point (1, k) where r_+, r_- are the distances from the center of attraction to the apsidal points of the osculating orbit, $k > 1$. On the basis of the special selected breakdown of the investigated region, the algorithm is written out for calculating the optimal law of application of tangential pulses at the apsidal points.

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KIRYUKIN, V. V., SHNAREVICH, A. A.

"Analytic Estimates of the Probability of Unstable States in One Queueing System"

Tr. Sib. Fiz.-tekhn. In-ta Pri Tomsk. Un-te [Works of Siberian Physics and Technology Institute at Tomsk University], No 51, 1970, pp 112-115, (Translated from Referativnyy Zhurnal, Kibernetika, No 10, 1971, Abstract No 10 V83 by Ye. Kashafutdinova).

Translation: The functioning of a single-channel queueing system with failures, representing a model of certain transport problems with finitie number v of waiting locations is studied in a fixed time sector $0 \leq t \leq T$. It is assumed that at moment in time $t = 0$, n requests ($n \geq v$) are received, which are serviced by moment $t = T$ with probability 1. During the time interval $0 \leq t \leq T$, the system receives a random flow of requests. Each request takes a free place in line and remains in line until the end of the interval (0, T), or is lost if there are no free places in line at the moment of arrival of the request. The input and output flows of requests are independent with arbitrary distributions $V_m(t)$ and $I_k(t)$ respectively, where $V_m(t)$ is the probability that m requests have been received by the system by moment t, while $I_k(t)$ is the probability that exactly k requests have left the system by moment t. P'(t), the upper boundary of the probability of loss of a request at moment t, is defined:

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USSR UDC 519.217

KIRYUKIN, V. V., SHNAREVICH, A. A., Tr. Sib. Fiz.-tekhn. In-ta Pri Tomsk. Unte, No 51, 1970, pp 112-115.

$$P'(l)=\sum_{k=0}^{n} I_k(l)\cdot\sum_{m=v+k-n}^{m} V_m(l),$$

allowing, in particular, estimation of the optimal values of various system parameters without the use of modeling. Results are presented from machine experiments for testing the adequacy of the analytic estimate.

USSR

UDC 537.312.62

SHNAREVICH, D. I.

"Use of Superconductors in New High-Sensitivity Devices"

Pribory i sistemy upr. (Control Devices and Systems), 1971, No 1, pp 56-57 (from RZh-Radiotekhnika, No 4, Apr 71, Abstract No 4D464)

Translation: Brief information is given about the unique properties of superconductors and their use in modern engineering. The Josephson effect is described application of which in the radiofrequency range must have great effect on the creation of a new generation of highly sensitive devices of the voltmeter, null detector and magnetometer type. High-frequency spectrometers, microwave amplifiers and mixers, infrared detectors, noise thermometers, and so on are investigated. The bibliography has 5 entries.

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USSR

UDC 621.791.75.04

VERBITSKIY, V. G., and LANDA, M. I., Candidates of Technical Sciences, and TUKHMETOV, R. YU., Engineer Ufa Aviation Institute imeni S. Ordzhonikidze); SHNAYDER, B. I., Candidate of Technical Sciences (Institute of Electric Welding imeni Ye. O. Paton, Academy of Sciences Ukrainian SSR)

"Use of Ceramics in Microplasma Welding Torches"

Kiev, Avtomaticheskaya Svarka, No 2, Feb 74, pp 70-71

Abstract: The requirements of microplasma welding torches are discussed from the viewpoint of using nozzles made of ceramics. Analysis of the physico-chemical, thermomechanical, and electrical properties of ceramic materials showed that materials of the following modifications are required for welding torches: volumetrically constant with a porous ceramic structure for making parts testing the sharp thermal shocks and action of high temperature; volumetrically constant with a high gas permeability for gas lenses, and dense ceramic materials providing laminar flow of the shielding gas for mechanically and electrically loaded parts. It is advantageous to use materials of the Al_2O_3-ZrO_2 system to produce ceramics of the described modifications.

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VERBITSKIY, V. G., et al., Avtomaticheskaya Svarka, No 2, Feb 74, pp 70-71

Materials made of MgO, HfO_2 and others also show promise for use in the design of microplasma welding torches. Three figures, three bibliographic references.

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UDC 621.791.037

USSR

SHNAYDER, B. L., Institute of Electric Welding imeni Ye. O. Paton, SERGEYEV, Yu. Ye., VERBITSKIY, V. G., GETSONOK, A. L., and YAKOVLEV, G. Kh., Ufa Aviation Institute imeni S. Ordzhonikidze

"Controlling Automatic Tungsten Electrode Argon Arc Welding of Thin-Sheet Parts with Curvilinear Contours"

Kiev, Avtomaticheskaya Svarka, No 12, Dec 70, pp 15-18

Abstract: Welding of parts with curvilinear contours such as those used in the manufacture of piping and nozzles, is a process which can best be done automatically. The seams in this type of welding are curved, in the vertical plane, and the parameters controlled in the welding process are the length of the arc, the welding rate consisting of a horizontal and vertical component, the angle of inclination of the electrode to the profile, and the angle of inclination of the part profile along the seam line relative to the horizontal plane. If this last factor is not controlled, its effect on the quality of the seam must be compensated by correcting the welding rate or the current. The authors found also that in the development of an automatic control system of arc welding, the inertia of the arc must be

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SHNAYDER, B. I., et al, Avtomaticheskaya Svarka, No 12, Dec 70, pp 15-18

taken into account. Results obtained in the article were produced through the automatic AGK-1 welding machine.

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USSR UDC 621.791.008.1

SHNAYDER, B. I., Candidate of Technical Sciences, and VOROPAY, N. M., Candidate of Technical Sciences

"Conference on Micro-Plasma Welding"

Kiev, Avtomaticheskaya Svarka, No 5, May 71, pp 77-78

Abstract: The First Interdepartmental Conference on Micro-Plasma Welding, called by the Electric Welding Institute imeni Ye. O. Paton and the Ukrainian Republic and Kiev Regional Administrations of the NTOMashprom Scientific and Technical Society of the Machinery Industry, was held 21-22 Jan 1971 in Kiev. More than 250 representatives of various organizations of the country participated and 35 papers were presented on development, investigation, and application of methods, apparatus, and technology of micro-plasma welding. The conference was opened by Academician B. Ye. Paton who outlined the high development tempo of micro-plasma welding, particularly in the last five years. Associate Member of the Academy of Sciences of the Ukrainian Soviet Socialist Republic D. A. Dudko et al discussed the development status and perspectives of micro-plasma welding. Candidate of Technical Sciences B. I. Shnayder et al discussed the technology of micro-plasma welding of a foil on palladium base with steel Kh18N10T. The use of micro-plasma welding for hermetization

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SHNAYDER, B. I. and VOROPAY, N. M., Avtomaticheskaya Svarka, No 5, May 71, pp 77-78

purposes was discussed in reports of Engineer D. M. Khimich et al, B. I. Shnayder et al, and Engineer G. V. Akhlamenok et al. Engineer G. M. Chernavskaya et al reported on micro-plasma welding in the production of electro-vacuum apparatus. Engineer V. F. Petrushev et al reported on welding technology of circular seams of components with massive blocks. Engineer D. M. Pogrebinskiy et al discussed the use of a low-amp plasma arc for the production of diffusion separators of hydrogen from a foil on palladium base. Engineer A. A. Sokolov et al reported on micro-plasma welding of large bellows of stainless steel type 18-8. Engineer L. N. Kozlov et al reported on types of power packs and plasmotrons for micro-plasma welding. Engineer N. V. Kosichkin et al reported on outfitting materials of δ = 0.2-0.5 mm for micro-plasma welding in a controlled medium of shielded gas. Engineer A. F. Zorikhin et al reported on a transistor power pack of block type for argon-arc and micro-plasma welding. Engineer V. S. Golikov reported on automation of the micro-plasma welding process at the "Prodmash" plant. Engineer D. A. Dudko et al discussed properties of welds of light metals and alloys. Engineer R. D. Shteyn reported on micro-plasma welders of light metals with synchronous alloying of welds.

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USSR

SHNAYDER, B. I. and VOROPAY, N. M., Avtomaticheskaya Svarka, No 5, May 71, pp 77-78

Candidate of Technical Sciences N.M. Voropay reported on the development of a micro-plasma welding method using different-polar right-angled impulses. Engineer P. A. Alsuf'yeva et al reported on studies of optimum arc burning conditions. Engineer V. A. Fursov et al reported on the mechanism of cathodic diffusion of a low-amp plasma arc. Three reports (Doctor of Technical Sciences. D. M. Rabkin et al, Engineer N. P. Durnitskiy et al, and Engineer V. G. Kurbakov et al) dealt with micro-plasma welding of aluminum. Engineer A. A. Grigor'yev et al reported on the technology of micro-plasma welding of prefabricated thin packings of sealing rings. Other reports dealt with developments of micro-plasma welding automations (Candidate of Technical Sciences V. Ye. Paton et al), a small-scale power-pack for currents up to 50 amp (Ye. I. Shmakov), the power-pack A1347 for currents up to 150 amp (Engineer V. Ye. Sklyarevich et al), use of micro-plasma welding for production of vacuum-tight objects of nickel δ = 0.1-0.2 mm (Engineer L. G. Mironov et al), dental-prosthetic works (A. A. Lyubchevskiy), repair works of tubing equipment (Engineer A. I. Strizhak), and the production of filter components (Engineer A. P. Blokhin et al) and electric machines (Engineer F. A. Sromin et al). Engineer Ye. I. Rytvin et al reported on micro-plasma welding of platinum-based alloys, Engineer V. A. Zrashevskiy -- on micro-plasma cutting of fibrous

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USSR

SHNAYDER, B. I. and VOROPAY, N. M., Avtomaticheskaya Svarka, No 5, May 71, pp 77-78

materials, and Engineer D. A. Dudko et al -- on micro-plasma vacuum shot welding. The conference outlined the further development of automation of welding processes.

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UDC: 621.791.89:669.15-194

SHNAYDER, B.I., VERBITSKIY, V.G., and VANGNITS, I.S.

"The Use of Microplasma Welding to Correct Defects in Stainless Steel Units"

Kiev, Avtomaticheskaya Svarka, No 5, May 1970, pp 71-72

Abstract: Defects (e.g., blowholes and pores) in stainless steel units are usually corrected by argon arc welding. However this method has several shortcomings, the most serious being the presence of a large warmup zone which leads to warping of the metal, solder fusion, and structural changes. Microwave welding does not have these disadvantages. A study was made of correcting defects in stainless steel by using microplasma welding. Equipment developed at the Institute of Electric Welding imeni Ye. O. Paton was used in the study. An A-1255 power supply device was used with a welding torch operating on 0.5-10 ampere DC current under continuous arc conditions. Argon was used as the plasma-forming gas; the shielding gas was a mixture of argon and hydrogen (96% Ar - 4% H_2). After welding the units were subjected to repeated airtightness tests under a dynamic pressure of 20 atmospheres. No leaks were detected in the welded sites. Metallographic investigations indicated that the fused metal was dense, and cracks, pores, and other defects were absent. The depth of fusion was up to 0.8 mm. No structural changes were detected at the fused metal boundary. The reverse side of the welded

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SHNAYDER, N.I., et al, Avtomaticheskaya Svarka, No 5, May 1970, pp 71-72

walls had an iridescent tarnish corresponding to a heating temperature of about 700°C. The state of brazed joints in the weld zone was satisfied, and solder fusion or oxidation was not detected. The welded surface does not require mechanical dressing.

USSR UDC 533.697

BORSHCHEVSKIY, Yu. T., KOLODIN, A. M., and SHNAYDER, V. E.

"Motion of a Circular Film Formed of Drops of Sprayed Liquid"

Tr. Novosib. in-ta inzh. vodn. transp. (Transactions of the Novosibirsk Institute of Water Transport Engineers), Vypusk (Issue, 44, 1970, pp 153-159 (from RZh-Mekhanika, No 12, Dec 70, Abstract No 12B411, by Yu. F. Dityakin)

Translation: The motion of a liquid film formed on the walls of a circular vertical tube by drops of liquid falling on its surfaces from a sprayer is examined. It is assumed that a steady turbulent gas flow is passing through the tube, that the gravitational force acting on the gas is small, and that the flow in the tube is axisymmetric and one-dimensional. The mass balance equation for this flow is derived. A solution is obtained for the differential equation under the corresponding boundary value conditions. This solution consists of change in the flow of the drop masses due to turbulent diffusion and settling of the drops onto tube walls. Factors affecting drop saturation of the flow along the sides of the tube are determined; here momentum transport equations for two-phase flows are employed. The bulk concentration of liquid drops at the tube surface is shown to be

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APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002203010001-2"

USSR

BORSHCHEVSKIY, Yu. T., et al., Tr. Novosib. in-ta inzh. vodn. transp. (Transactions of the Novosibirsk Institute of Water Transport Engineers), Vypusk (Issue) 44, 1970, pp 153-159 (from RZh-Mekhanika, No 12, Dec 70, Abstract No 12B411, by Yu. F. Dityakin)

determined by the field of gas velocities along the tube walls. Formulas are derived for calculating the velocity field for the case of small drops.

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USSR

UDC: 537.521.7

NAMITOKOV, K. K., KRASOVITSKIY, V. B., SHNAYDER, Ya. N.,
All-Union Scientific Research Institute for Design and Planning of Electrical Equipment, Khar'kov

"Concerning Development of an Electron Avalanche in an Interelectrode Gap in a Weak Electric Field"

Leningrad, Zhurnal Tekhnicheskoy Fiziki, Vol 41, No 11, Nov 71, pp 2357-2362

Abstract: The authors study the effect of electron avalanche formation in a gas-filled interelectrode space in the presence of a weak electric field. The analysis is based on a kinetic equation, thus enabling the authors to follow development of the process with time in addition to calculating the ionization coefficient. The strength of the steady electric field is assumed to be so low that the energy acquired by a free electron over its mean free path is much less than the ionization energy of the gas atoms. The ionization coefficient is

USSR

NAMITOKOV, K. K. et al., Zhurnal Tekhnicheskoy Fiziki, No 11, Nov 71, pp 2357-2362

found as a function of the gas parameters. As in Townsend's theory, the one-dimensional problem is considered: the electrons move parallel to the electric field, which may occur in the presence of a strong magnetic field parallel to the electric field. Bibliography of 7 titles.

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USSR

UDC 621.395.44

ZHITKEVICH, R.G., SHNAYDERMAN, M.G.

"Device For Remote Monitoring Of HighFrequency Channel Of Multichannel System Of Long-Distance Communication"

USSR Author's Certificate No 272383, filed 5 Feb 68, published 17 Sept 70 (from RZh--Elektrosvyaz', No 3, March 1971, Abstract No 3.64.87P)

Translation: In long-distance high-frequency communication apparatuses, monitoring of balanced cables for the soundness of the circuit is accomplished by connection of a control generator to the channel at each uncontrolled repeater station (with the aid of a telemechanical system). A device is proposed, with the aid of which it is possible to convert and direct the frequency of the current of the control generator to the channel of the opposite direction of transmission for monitoring. The frequency conversion unit contains an input and output high-impedance device, a narrow-band filter, a cutoff element, and an additional generator. N.L.

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USSR

UDC 621.395.521

ZHITKEVICH, R. G., SHNAYDERMAN, M. G.

"A Device for Remote Monitoring of the High-Frequency Channel in Multichannel Long-Range Communications Systems"

Moscow, Otkrytiya, Izobreteniya, Promyshlennyye Obraztsy, Tovarnyye Znaki, No 19, 1970, Author's Certificate No 272383, Filed 5 Feb 68, p 45

Abstract: This author's certificate introduces a device for remote monitoring of the high-frequency channel in multichannel lor range communications systems, using a monitoring oscillator remotely connected the channels of both directions of transmission at each unmanned amplification point. As a distinguishing feature of the patent, the device is designed to provide a check on the proper transmission through the high-frequency channel in both directions for the section of the main line where the subterranean cable becomes an underwater coaxial cable at an unmanned amplification station. Connected between the reception amplifier output and the transmission amplifier input at the unmanned station is a unit for converting the frequency for monitoring the elements of the channel in one direction of transmission to the frequency for monitoring the elements of the channel in the other direction of transmission.

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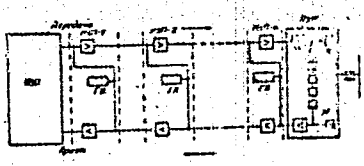
USSR

ZHITKEVICH, R. G., et al., Otkrytiya, Izobreteniya, Promyshlennyye Obraztsy, Tovarnyye Znaki, No 19, 1970, Author's Certificate No 272383, Filed 5 Feb 68, p 46



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1/2 014 UNCLASSIFIED PROCESSING DATE--04DEC70

TITLE--PYROGALLOL COMPLEXES OF VANADIUM V IN METHANOL -U-

AUTHOR-(02)-CHERNAYA, N.V., SHNAYDERMAN, S.YA.

COUNTRY OF INFO--USSR

SOURCE--ZH. ANAL. KHIM. 1970, 25(3), 495-9

DATE PUBLISHED--------70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--VANADIUM COMPLEX, SPECTROPHOTOMETRIC ANALYSIS, METHANOL, ION EXCHANGE RESIN, BENZENE DERIVATIVE, HYDROXYL RADICAL

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3005/0012 STEP NO--UR/0075/70/025/003/0495/0499

CIRC ACCESSION NO--AP0132312

UNCLASSIFIED

2/2 014 UNCLASSIFIED PROCESSING DATE--06DEC70

CIRC ACCESSION NO--AP0132312

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE COMPLEX FORMATION OF V(V) WITH PYROGALLOL IN A MEOH MEDIUM WAS STUDIED SPECTROPHOTOMETRICALLY. PHYS. CHEM. PROPERTIES OF THE COMPDS. WERE INVESTIGATED. THE COMPLEX FORMATION PROCEEDS IN STAGES. THE COMPN. OF THE COMPDS. WAS FOUND BY THE ISOMOLAR SERIES AND LIMITED LOGARITHMIC METHODS. THE RATIO OF V TO PYROGALLOL (H SUB2 PG) IN THE COMPDS. IS 1:1 AND 1:2. THE ANIONIC NATURE OF THE COMPLEXES WAS ESTABLISHED BY EXTS. ON ELECTROMIGRATION AND WITH ION EXCHANGE RESINS. THE APPROX. INSTABILITY CONSTS. FOR THE SIMPLEST COMPLEX (VO SUB2 PG) IN MEOH AND IN AQ. MEOH MIXTS. WERE CALCD. THE COMPLEX STABILITY INCREASES WITH INCREASING MEOH CONTENT IN THE SOLN. FACILITY: KIEV POLYTECH. INST., KIEV, USSR.

UNCLASSIFIED

1/2 010 UNCLASSIFIED PROCESSING DATE--04DEC70
TITLE--SPECTROPHOTOMETRIC STUDY OF A VANADIUM,V,SALICYLATE,PYRIDINE SYSTEM
-U-
AUTHOR-(02)-SHNAYDERMAN, S.YA., DEMIDOVSKAYA, A.N.

COUNTRY OF INFO--USSR

SOURCE--UKR. KHIM. ZH. 1970, 36(2), 154-7

DATE PUBLISHED--------70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--SPECTROPHOTOMETRIC ANALYSIS, VANADIUM COMPLEX, SALICYLATE, PYRIDINE, TARTRATE, OXALATE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--2000/2129 STEP NO--UR/0073/70/036/002/0154/0157

CIRC ACCESSION NO--AP0125713
UNCLASSIFIED

2/2 010 UNCLASSIFIED PROCESSING DATE--04DEC70

CIRC ACCESSION NO--AP0125713

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. V(V) FORMS AT PH 2.75-3.75 A 1:2:2 COMPLEX WITH SALICYLATE AND PYRIDINE WITH IS EXTD. BY C SUB2 H SUB4 CL SUB2 FROM AQ. SOLN. CONTG. 40PERCENT MEOH TO PREVENT PRTN. OF SALICYLIC ACID. THE COMPLEX ABSORBS AT 540 NM AND IS NOT VARY STABLE. IF TO A SOLN. CONTG. 2 TIMES 10 PRIME NEGATIVE4 M V, 0.6 M SALICYLATE, AND 0.8 M PYRIDINE THE FOLLOWING EXCESSES (AS MULTIPLES OF THE V CONCN.) OF LIGAND ARE ADDED, THE ABSORBANCE IS CUT IN HALF: F 120, TARTRATE 1.5, CITRATE 5, AND OXALATE 3. FACILITY: KIEV. POLITEKH. INST., KIEV, USSR.

UNCLASSIFIED

1/2 010 UNCLASSIFIED PROCESSING DATE--16OCT70

TITLE--SPECTROPHOTOMETRIC STUDY OF COMPLEXING IN VANADIUM (V) 3,4,DIHYDROXYBENZOIC (PROTOCATECHUIC) ACID ANTIPYRINE AND VANADIUM (IV)

AUTHOR-(03)-SHNAYDERMAN, S.YA., KLIMENKO, YE.P., DEMIDOVSKAYA, A.N.

COUNTRY OF INFO--USSR

SOURCE--UKR. KHIM. ZH. 1970, 36(1), 8-13

DATE PUBLISHED--------70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--SPECTROPHOTOMETRIC ANALYSIS, VANADIUM COMPLEX, BENZOIC ACID, ORGANIC SOLVENT, DISSOCIATION CONSTANT

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1992/1991 STEP NO--UR/0073/70/036/001/0008/0013

CIRC ACCESSION NO--AP0112955

UNCLASSIFIED

2/2 010 UNCLASSIFIED

CIRC ACCESSION NO--AP0112955 PROCESSING DATE--16OCT70

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. V(IV), ANTIPYRENE, AND 1,2,3,C SUB6 H SUB3 (OH) SUB3 FORM 2 COMPLEXES ABSORBING AT 440 AND 630 NM AND ARE EXTD. BY C SUB2 H SUB4 CL SUB2 FROM AQ. SOLN. AT PH 4.5-5. THE COMPNS. OF THESE COMPLEXES ARE 1:1:1 AND 1:2:1, RESP., AND THEIR APPARENT MOLAR ABSORPTIVITIES ARE 2200 AND 4200, RESP. V(V), ANTIPYRENE(ANT), AND 3,4,(PRIMENEGATIVE O) SUB2 NEGATIVE C SUB6 H SUB3 CO SUB2 PRIME NEGATIVE FORM A TERNARY COMPLEX WITH PI MAX. 590 NM, ABSORPTIVITY 6500, AND OPTIMUM PH FOR EXTN. 3.7. AT THIS PH THE EQUIL. CONST. FOR THE REACTION VO((PRIME NEGATIVE O) SUB2 C SUB6 H SUB3 CO SUB2) SUB2 ANT SUB3 IN ORG. SOLVENT IN EQUILIBRIUM VO((PRIME NEGATIVE O) SUB2 C SUB6 H SUB3 CO SUB2) SUB2 PLUS 3 ANT IN AQ. SOLN. IS 1.3 TIMES 10 PRIME NEGATIVE3. THE DISSOCN. CONST. FOR VO((PRIME NEGATIVE O) SUB2 C SUB6 H SUB3 CO SUB2) SUB2 IS 2 TIMES 10 PRIME NEGATIVE5.

FACILITY: KIEV. POLITEKH. INST., KIEV, USSR.

UNCLASSIFIED

1/2 022 UNCLASSIFIED PROCESSING DATE--02OCT70

TITLE--COMPLEXING IN A TITANIUM(IV),2,4,DIHYDROXYBENZOIC ACID SYSTEM -U-

AUTHOR-(04)-ASTAKHOV, A.I., KAYAZEVA, YE.N., BLEYKHER, YA.I., SHVAYDERMAN, S.YA.

COUNTRY OF INFO--USSR

SOURCE--ZH. OBSHCH. KHIM. 1970, 40(2), 347-52

DATE PUBLISHED-------70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--SPECTROPHOTOMETRIC ANALYSIS, HYDROXIDE, BENZENE DERIVATIVE, CHEMICAL STABILITY, ORGANOTITANIUM COMPOUND, ORGANIC COMPLEX COMPOUND, METAL COMPLEX COMPOUND, TITANIUM

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1993/0200 STEP NO--UR/0079/70/040/002/0347/0352

CIRC ACCESSION NO--AP0113139

UNCLASSIFIED

2/2 022 UNCLASSIFIED PROCESSING DATE--02OCT70

CIRC ACCESSION NO--AP0113139

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. SPECTROPHOTOMETRIC DATA ARE PRESENTED FOR THE SYSTEM OF TI(IV) WITH 2,4,DIHYDROXYBENZOIC ACID (H SUB3 R). THE COLORED COMPLEX FORMS BEST AT PH 3-6, THE PRODUCT HAVING A STRONG ABSORPTION BAND AT 355 M MU. THIS APPEARS TO BE THE MA SUB2 TYPE OF COMPLEX. AT PH SMALLER THAN 3.3, THE REACTION IS: TIO PRIME2 PLUS 2H SUB3 R IN EQUILIBRIUM TIO(H SUB2 R) SUB2 PLUS 2H PRIME POSITIVE, WHILE AT PH 3.3-6.5 IT IS: TIO PRIME2 POSITIVE PLUS 2H SUB2 R PRIME NEGATIVE IN EQUILIBRIUM TIO(H SUB2 R) SUB2. THE MEAN VALUE OF THE INSTABILITY CONST. OF THE COMPLEX WAS CALCD. AS 5.93 TIMES 10 PRIME NEGATIVE7.

UNCLASSIFIED

USSR

UDC 51:155.001.57:681.3.06

SHNEYDERMAN, Ya. A.

"Algorithm for Construction Classes of Conditional Equivalence of Certain Key Words in the Development of a Dictionary of Descriptors"

Materialy Seminara Po Kibernet. AN Mold SSR, Mold. Territor. Gruppa. Nats. Kom. SSSR Po Avtomat. Upr., [Materials of Seminar on Cybernetics, Academy of Sciences, Moldavian SSR, Moldavian Territorial Group, National Committee of USSR on Automatic Control], No 25, pp 3-10, (Translated from Referativnyy Zhurnal Kibernetika, No 5, 1971, Abstract No. 5V678 by V. Mikheyev).

Translation: An algorithm is suggested for automation of the combining of key words into classes of conditional equivalence. Its idea is that for each key word, its lexical and semantic versions are written out. Then, successive comparison of key words with all lexical and semantic versions relating to other key words is performed, as well as successive comparison of the lexical and semantic versions of various key words with each other. The following cases may thus be produced: 1) The key word corresponds with the lexical and semantic versions of other key words; 2) the lexical and semantic versions of a key word corresponds with the lexical and semantic versions of other key words. In both cases, the corresponding words, together with the related key words and lexical-semantic versions form a class of conditional equivalence. The difficulties in practical realization of the algorithm using tabulating machines are discussed. Examples and results of an experiment with a representative mass of key words to be introduced to a branch dictionary of descriptors on material science are presented.

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USSR

UDC 681.3.06:51

MIROSHNIKOV, V. I., SHNEYDERMAN, Ya. A.

"Experimental Evaluation of Criteria of Semantic Correspondence for an Automated Information Retrieval System"

Materialy Seminara Po Kibernet. AN Mold SSR, Mold. Territor. Gruppa Nats. Kom. SSSR Po Avtomat. Upr., [Materials of Seminar on Cybernetics, Academy of Sciences, Moldavian SSR, Moldavian Territorial Group, National Committee of USSR on Automatic Control], No 25, 1970, pp 11-34, (Translated from Referativnyy Zhurnal Kibernetika, No 5, 1970, Abstract No. 5V636 by V. Mikheyev).

Translation: An automated documentographic descriptor information retrieval system using the Minsk-22 computer is described, and certain results of experimental evaluation of strong criteria of semantic correspondence using adjustable "Weight" factors are discussed. 10 biblio. refs.

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UDC 025.4:621.51

TECHNOLOGICAL DESIGN CLASSIFICATION OF PARTS

[Article by L.M. Kulik, G.M. Shnaydman, Candidates of Technical Sciences and S.L. Taller, VNIIKI; Moscow, Standarty i Kachestvo, Russian, No 5, 1972, pp 13-15]

Sharp intensification of the scientific and production activity, non-proportionally fast growth of the volume of information, and an increase and complication of its flows have given rise to the objective necessity for introduction of computer engineering and, consequently, formalization of the language which is based on the principles of systematization and coding of technical-economic information. One of the most widespread and active forms of systematizing information is classification.

At the present time the problem of introducing automatic information control systems on all levels of economic activity is being solved on a state scale. The supply of documents for such systems in machine and instrument making is based on a united system of classification and coding of technical-economic information the most important component parts of which are the design and technological process classifiers of parts for general machine building applications.

The design classification of parts for machine and instrument building has been performed within the framework of the All-Union Classifier of Industrial and Agricultural Production (OKP). The higher qualification groupings of the OKP encompass both commercial and noncommercial production (parts and assemblies), and they contain branch and general machine building classes of machine and instrument making.

The design classification of parts was constructed by the hierarchical principle where successive subdivision of the entire set of parts is carried out from top to bottom by the method of deduction into groupings having similar attributes.

The classifier of parts for general machine building application is a summary of nomenclatures of the groups of parts combined by the principle of structural similarity. The depth of the classification division numbers five levels: class, subclass, group, subgroup, type.

USSR

UDC 615.616.24-003.656.6

SHNAYDMAN, I. M.

"Mechanism of Sclerosing in the Presence of Silicosis and the Possibility of Correcting This Process Experimentally"

Nauch. tr. Irkutsk. med. in-t (Scientific Works of the Irkutsk Medical Institute), 1972, vyp 110, pp 34-35 (from RZh--Farmakologiya Khimioterapevticheskiye Sredstva. Toksikologiya, No 3, Mar 73, Abstract No 3.54.870)

Translation: Three elements of silicosis pathogenesis are isolated: quartz damage to the mytochondrial membranes of the coniophage with disturbance of the bioenergetics and its biosynthetic activity; autolysis of the coniophage with separation of lisolecitin into the medium; intensified synthetic activity of the fibroblast against the background of reduced bioenergetics with the production of atypical mucopolysaccharides and collaten. The means of possible modification of this process are as follows: reducing the surface activity of the quartz, the application of membrane stabilizers, removal of the decomposition products of the coniophage, intensification of the oxidation-reduction processes, and inhibition of the synthetic function of the fibroblast.

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USSR

UDC 612.112.3.553.62

STARIKOVA, S. K., KATSNEL'SON, B. A., ARONOVA, G. V., and SHNAYDMAN, I. M., Sverdlovsk Institute of Labor Hygiene and Occupational Diseases, and Kazakh Institute of Labor Hygiene and Occupational Diseases, Karaganda

"Participation of Polymorphonuclear Leuhocytes in Alveolar Phagocytosis of Quartz Dust, and Its Connection With the Biological Aggressiveness of Quartz"

Moscow, Byulleten' Eksperimental'noy Biologii i Meditsiny, Vol 70, No 9, Sep 70, pp 113-116

Abstract: Experiments were carried out to determine the effects of chronic inhalation of quartz dust on rats. Macrophages and polymorphonuclear leuhocytes were washed out of the lungs by the La Belle and Brieger method, and the ratio between them was determined. Polymorphonuclear leuhocytes predominated in experimental animals, while macrophages were more common in the controls since they were less damaged from dust. This relationship was confirmed in a special chronic inhalation experiment in which the resistance of alveolar macrophages to the cytopathogenic effect of quartz was enhanced by treatment with polyvinylpyridine-N-oxide. With endotracheal introduction, quartz treated with trimethylchlorosilane (which resulted in low fibrinogenic activity) caused a significantly lower shift in the cellular composition of lung perfusate toward polymorphonuclear leuhocytes than nontreated quartz dust. Phagocytosis of quartz dust by

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USSR

STARIKOVA, S. K., et al., Byulleton' Eksperimental'noy Biologii i Meditsiny, Vol 70, No 9, Sep 70, pp 113-116

polymorphonuclear leuhocytes appears to be an additional factor in pulmonary self-purification from especially aggressive particles. This process apparently occurs as a result of irritation by quartz dust and by the products of macrophage degeneration. The neutrophils seem to be less sensitive to the cytopathogenic effect than the macrophages.

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USSR

UDC 615.272.2:547.821.4.03:616.24-003.662-092.9

KATSNEL'SON, B. A., BABUSHKINA, L. G., ARONOVA, G. V., STARIKOVA, S. K., POCHASHEV, Ye. N., SUKAYDMAN, I. Ya., POSTOVSKIY, S. N., BORODULINA, S. N., and MALYARENKO, I. S., Sverdlovsk Institute of Industrial Hygiene and Occupational Diseases, and Karaganda Institute of Industrial Hygiene and Occupational Diseases and Ural Polytechnic Institute, Sverdlovsk

"Experimental Study of the Protective Effect of Polyvinylpyridine-N-Oxide Against Silicosis"

Moscow, Gigiyena i Sanitariya, No 10, Oct 1970, pp 20-23

Abstract: A polyvinylpyridine-N-oxide polymer with a molecular weight of 117,500 was prepared, and its activity and effectiveness against silicosis were compared with those of a previously prepared polymer of molecular weight 40,000 and the P-204 polymer (Bayer, West Germany). It was found that the new polymer was more effective than either of the other two polymers against intratracheal dust (cristobalite) introduced in rats for a period of 3-1/2 months. Development of silicosis was sharply reduced, as indicated by the decrease in size and number of cellular-dust lumps and the reduction in proliferating reactions, and sclerotic shifts.

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USSR

KATSNEL'SON, B. A., et al, Gigiyena i Sanitariya, No 10, Oct 1970, pp 20-23

Dust elimination from the lungs and inhibition of the silicotic fibrogenesis process are associated with an increase in the resistance of the alveolar coniophages to the cytopathic effect of silicon. It was found that this process was accompanied by a decrease in the diffusion of a lysosome hydrolytic enzyme (acid phosphatase) into the cytoplasm of macrophages due to the effect of silicon, a fact which is attributed to the anti-silicosis effect of the new polyvinylpyridine-N-oxide polymer.

1/2 024 UNCLASSIFIED PROCESSING DATE--11SEP70

TITLE--TURBULENCE ENERGY BALANCE IN A NATURE RIVER BED STREAM -U-

AUTHOR--GRINVALD, D.I., SHNAYDMAN, V.A.

COUNTRY OF INFO--USSR

SOURCE--METEOROLOGIYA I GIDROLOGIYA, 1970, NR 2, PP 71-75

DATE PUBLISHED-------70

SUBJECT AREAS--EARTH SCIENCES AND OCEANOGRAPHY

TOPIC TAGS--RIVER WATER, TURBULENT FLOW, STREAM, KINETIC ENERGY

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1987/0871 STEP NO--UR/0050/70/000/002/0071/0075

CIRC ACCESSION NO--AP0104307

UNCLASSIFIED

2/2 024 UNCLASSIFIED

CIRC ACCESSION NO--AP0104307 PROCESSING DATE--11SEP70

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. RESULTS OF DATA PROCESSING OF INSTANTANEOUS STREAM VELOCITIES ARE GIVEN IN THE ARTICLE. IT IS SHOWN THAT IN THE BOTTOM LAYER A VERTICAL PROFILE OF THE AVERAGED LONGITUDINAL VELOCITY COMPONENT IS WELL DESCRIBED BY THE LOGARITHMIC LAW. THE VALUES OF DYNAMIC VELOCITY AS WELL AS TURBULENT KINETIC ENERGY PRODUCTION ARE DETERMINED. DISSIPATION VELOCITY OF TURBULENT ENERGY IS DEFINED FROM VALUES OF SPECTRAL DENSITY AND STRUCTURAL FUNCTIONS IN THE INERTIA INTERVAL. KINETIC ENERGY OF TURBULENCE AND THE COEFFICIENT OF TURBULENT VISCOSITY ARE EXPRESSED BY MEANS OF DISSIPATION AND A VERTICAL COORDINATE. THE BALANCE OF KINETIC ENERGY OF TURBULENCE IN THE BOTTOM LAYER IS GIVEN. THE RELATIONSHIP BETWEEN DIMENSIONLESS VALUES OF DISSIPATION VELOCITY AND THE VERTICAL COORDINATE IS OBTAINED.

UNCLASSIFIED

1/2 025 UNCLASSIFIED PROCESSING DATE--23OCT70

TITLE--COMPONENT CLASSIFICATION FOR UNIFIED SYSTEM OF DESIGNER DOCUMENTATION -U-

AUTHOR-(04)-KULIK, L.M., SHNAYDMAN, G.M., POGODIN, B.A., TALLER, S.L.

COUNTRY OF INFO--USSR

SOURCE--STANDARTY I KACHESTVO, 1970, NR 4, PP 22-30

DATE PUBLISHED-------70

SUBJECT AREAS--BEHAVIORAL AND SOCIAL SCIENCES

TOPIC TAGS--DESIGN STANDARD, DESIGN FACILITY R AND D MANAGEMENT, PRODUCTION STANDARD, ENGINEERING STANDARD, DATA PROCESSING SYSTEM

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1999/0109 STEP NO--UR/0422/70/000/005/0022/0030

CIRC ACCESSION NO--AP0122375

UNCLASSIFIED

2/2 025 UNCLASSIFIED PROCESSING DATE--23OCT70

CIRC ACCESSION NO--AP0122375

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE ARTICLE PRESENTS A CLASSIFICATIONAL SYSTEM OF DESIGNATIONS FOR PRODUCTS AND DESIGNER DOCUMENTS IN MECHANICAL AND PRECISION ENGINEERING. UNIFICATION OF PRODUCT DESIGNATIONS, INCLUDING THE DESIGNATIONS OF COMPONENT PARTS, IS SUGGESTED AND THEIR CLASSIFICATIONAL CHARACTERISTICS ARE GIVEN. COMPONENT PARTS IN MECHANICAL AND PRECISION ENGINEERING CAN BE CLASSIFIED AS THOSE COMMON FOR ENGINEERING AT LARGE AND THOSE SPECIFIC FOR CERTAIN BRANCHES OF INDUSTRY. FIGS. 5.

UNCLASSIFIED

USSR

UDC: 51:155.001.57:681.3.06

SHNEPS-SHNEPPE, M. A.

"Analysis of Algorithms for Automating Diagnosis in Medical Examinations"

Tr. VNII med. priborostr. (Works of the All-Union Scientific Research Institute of Medical Instrument Making), 1971, vyp. 1, pp 69-77 (from RZh-Kibernetika, No 12, Dec 71, Abstract No 12V1026)

Translation: The paper discusses the peculiarities of medical information obtained in mass medical examinations and the possibilities of automatic diagnosis based on linear discriminant functions. The advantages of using linear discriminant functions as compared with other methods are demonstrated: diagnosis with respect to unit deviation from the norm, diagnosis based on a logic tree, and the use of conditional probability for binary tags. Author's abstract.

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USSR

UDC 574.754.755.756.757

PETROVA, G. N., SHNER, V. F., ALEKSEYEVA, L. M., and SUVOROV, N. N., Moscow Chemico-Technological Institute imeni Mendeleyev, Moscow

"Derivatives of Indole. LXXXIII. Synthesis of Indole and 5-Bromoindole From 2-Naphthol and 6-Bromo-2-naphthol"

Riga, Khimiya Geterotsiklicheskikh Soyedinenly, No 6, Jun 73, pp 753-755

Abstract: Upon the oxidation of 2-naphthol and 6-bromo-2-naphthol with Na_2MoO_4 + 40% H_2O_2 in glacial acetic acid, alpha-carboxycinnamic acids were obtained. These acids were converted into the corresponding diamides which, on being subjected to the Hofmann reaction with NaOCl and KOH, yielded indole and 5-bromoindole, respectively. The oxidation of 5-nitro-2-naphthol under similar conditions led to the formation of the gamma-lactone of 6-nitro-2-carboxycinnamic acid. This compound could be converted into its amide by successive treatment with PCl_5 and liquid NH_3.

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USSR

UDC 547.751'241.07

SHAMSHIN, V. P., SHNER, V. F., and SUVOROV, N. N., Moscow Chemical-Technological Institute imeni D. I. Mendeleyev

"Indole Derivatives. LXXVI. Synthesis of Tris(1-benzylindolinyl-5)-phosphine oxide and Derivatives of Indolyl-5-phosphonic Acid"

Riga, Khimiya Geterotsiklicheskikh Soyedinenly, No 4, Apr 72, pp 498-501

Abstract: In a reaction of 1-benzyl-5-lithiumindole with dimethylchlorophosphate, tris(1-benzylindolinyl-5)phosphine oxide (I), m.p. 204-215° was isolated as a byproduct, in addition to the normally obtained dimethylester of 1-benzylindolinyl-5-phosphonic acid (II). The structure of (I) was proven by an independent synthesis and comparative analysis. Dehydration of (II) with chloranil yields dimethylester of 1-benzylindolyl-5-phosphonic acid, m.p. 89-90°. Catalytic dehydrogenation of this indoline is accompanied by debenzoylation, leading to the formation of a dimethyl ester of indolyl-5-phosphonic acid, m.p.141.5-143°, through a break in the P-C bond.

1/1

USSR

UDC 547.754+547.241

SHAMSHIN, V. P., SHNER, V. F., and SUVOROV, N. N., All Union Scientific Chemical-Pharmaceutical Research Institute imeni S. Ordzhonikidze and Moscow Chemical-Technological Institute imeni D. I. Mendeleyev

"Organophosphorus Derivatives of Indoline and Indole. I. Synthesis of Indolinyl-5-phosphonic Acid"

Leningrad, Zhurnal Obshchey Khimii, Vol 41 (103), No 3, Mar 71, pp 537-540

Abstract: A suitable synthesis for 1-benzyl-5-bromoindoline (I) was developed. A mixture of 5-bromoindoline, $CaCO_3$ and chlorobenzene in acetonitrile was stirred for 4 hrs at 60°, poured into excess water, extracted with ether, dried, and evaporated. Succinic anhydride was added to the residue, followed by ether and 5% sodium carbonate solution. The mixture was stirred, extracted with ether, evaporated, dissolved in hexane, treated with charcoal and left standing, to yield 78.2% of (I), m.p. 40.5-42.5°. (I) converted to 1-benzyl-5-lithiumindoline and condensed with dimethylchlorophosphate yielded the dimethyl ether of 1-benzylindolinyl-5-phosphonic acid. Hydrogenation in acetic anhydride over palladium gave dimethyl ester of 1-acetylindolinyl-5-phosphonic acid, which hydrolyzed to indolinyl-5-phosphonic acid, m.p. 242-244°.

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1/2 017 UNCLASSIFIED PROCESSING DATE--27NOV70
TITLE--MODERN DRUGS OF STEROID STRUCTURE -U-

AUTHOR-(04)-GRINENKO, G.S., SHNER, V.F., MENSHOVA, N.I., SUVOROV, N.N.

COUNTRY OF INFO--USSR

SOURCE--ZH. VSES. KHIM. OBSHCHEST. 1970, 15(2), 175-84

DATE PUBLISHED--------70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--CORTICOSTEROID, DRUG TREATMENT, MEDICINE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--3009/0122 STEP NO--UR/0063/70/015/002/0175/0184

CIRC ACCESSION NO--AP0138987

UNCLASSIFIED

2/2 017 UNCLASSIFIED PROCESSING DATE--27NOV70

CIRC ACCESSION NO--AP0138987

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. A REVIEW COVERING MODIFIED CORTICOSTEROIDS, GESTAGENS, ANABOLIC PRODUCTS, AND THEIR RELATION TO MODERN MEDICAL PRACTICE.

UNCLASSIFIED

USSR

UDC 539.3

SHNEREENKO K. I. (Institute of Mechanics Academy of Sciences Ukr SSR) (Kiev)

"Stresses in Sandwich Anisotropic Shells With Holes"

Kiev, Prikladnaya Mekhanika, Vol 7, No 10, Oct 71, pp 57-61

Abstract: The problem of stress distribution near holes in an arbitrary anisotropic sandwich shell made of fiberglass or metal plastic material is formulated. A method based on the applied theory of S. P. Timoshenko type and variational principles, permitting the determination of interlayer displacements of the shell sandwich on the whole is presented. Systems of algebraic equations for determining arbitrary steady solutions are derived. The method is illustrated by the study of stress concentration distribution on the contour of non-reinforced circular hole in a fiberglass cylindrical shell subjected to external pressure.

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USSR UDC 669.76:79

SOKOLOV, L. D. (Editor), SKUDNOV, V. A., SOLENOV, V. M., GLADKIKH, A. N., SHETULOV, D. I., SHNEYBERG, A. M., GUSLYAKOVA, G. P., and DMITRIYEV, N. P.

Mekhanicheskiye Svoystva Redkikh Metallov (Mechanical Properties of Rare Metals), Moscow, Izdatel'stvo Metallurgiya, 1972, 288 pp

Translation of Annotation: A study is made of the mechanical properties (deformation resistance, plasticity, fatigue, creep, and stress-rupture strength) of rare and other metals, and their dependence on temperature and deformation rate. Characteristics of strain hardening, the stress and plasticity dependencies on temperature and deformation rate parameters, and other experimental data are discussed on the basis of the theory of defects and other contemporary concepts regarding the type of bonds in crystals.

The book is intended for scientists, engineers, and technicians at institutes, design institutions, nonferrous metallurgy plants, machinebuilding plants, and power engineering stations. It can also be useful to aspirants and students in higher educational institutions.

Table of Contents Page

USSR

SOKOLOV, L. D. (Editor), et al., Mekhanicheskiye Svoystva Redkikh Metallov (Mechanical Properties of Rare Metals), Moscow, Izdatel'stvo Metallurgiya, 1972, 288 pp

2/4

USSR

SOKOLOV, L. D. (Editor), et al., Mekhanicheskiye Svoystva Redkikh Metallov (Mechanical Properties of Rare Metals), Moscow, Izdatel'stvo Metallurgiya, 1972, 288 pp

USSR

SOKOLOV, L. D. (Editor), et al., Mekhanicheskiye Svoystva Redkikh Metallov (Mechanical Properties of Rare Metals), Moscow, Izdatel'stvo Metallurgiya, 1972, 288 pp

4/4

USSR

UDC: 513.83+517.948

SHNEYBERG, I. Ya.

"On the Unconnectedness of a Group of Reversible Operators in a Pair of Hilbert Spaces"

Tr. NII mat. Voronezh. un-ta (Works of the Scientific Research Institute of Mathematics, Voronezh University), 1970, vyp. 1, pp 198-204 (from RZh-Matematika, No 5, May 71, Abstract No 5B770)

Translation: It is shown that a group of linear operators which act and have a continuous reverse simultaneously in l_1 and l_{2b}, where

$$l_{2b}=\left\{x:\|x\|_{l_{2b}}=\left\{\sum_1^\infty b_i x_i^2\right\}^{\frac{1}{2}}<\infty\right\},$$

are unconnected in topology generated by the norm $\|A\|=\max(\|A\|_{l_1},\|A\|_{l_{2b}})$, only if $\overline{\lim}\frac{b_{i+1}}{b_i}=\infty$. L. Ladyzhenskiy.

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USSR

UDC 519.21

SHNEYDER, A. A.

"Integral Characteristics of Stable Random Functions"

Nauchn. Tr. Volgogr. Politekhn. In-t. Mat. Mekh. Fiz. i Elektrotekhn [Scientific Works of Volgograd Polytechnical Institute, Mathematics, Mechanics, Physics and Electrical Engineering], Volgograd, 1970, pp 33-35 (Translated from Referativnyy Zhurnal Kibernetika, No. 4, April, 1971, Abstract No. 4, V99)

No Abstract.

1/1

USSR

UDC: 621.396.6-181.5

SHNEYDER, A. A., MIKHAYLOVICH, D. L.

"Improving the Technology of Making Germanium Integrated Microcircuits"

Elektron. tekhnika. Nauch.-tekhn. sb. Tekhnol. i organiz. proiz-va (Electronic Technology. Scientific and Technical Collection. Technology and Organization of Production), 1971, vyp. 2(42), pp 3-8 (from RZh-Radiotekhnika, No 6, Jun 71, Abstract No 6V268)

Translation: The paper describes the electrochemical technology of making series 102 integrated microcircuits with the use of pyrolytically precipitated silicon dioxide film as a mask for localizing electrochemical deposition of the emitter alloy, and alloying for diffusion of the emitters. Cracking of the emitter alloy in the diffusion process is prevented, and the process of electrochemical precipitation and alloying of electrodes is rigidly localized. The parameters of series 102 integrated microcircuits are stabilized. Resumé.

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Electronic Materials

USSR

UDC 621.317.39:531.7

SHNEYDER, A. YU., ZHURAVLEV, V. S., Candidates of Technical Sciences, VOLKINSHTEYN, YE. M., KOLESNIKOVA, I. N., Engineers

"Pressure-Sensitive Sensors made of Electrically Conducting Polymers"

Moscow, Pribory i Sistemy Upravleniya, No 2, 1972, pp 40-41

Abstract: The design and operating characteristics are presented for a pressure-sensitive sensor built at the Central Scientific Research Institute of Prosthetics and Orthopedic Appliances. The sensor is made of porous polymer material (sponge rubber, porolon, and so on) impregnated with various electrically conducting compounds (resins, enamels, and so on). The operating principle of the element is compared with the operating principle of sensors with carbon columns. The dispersion zone of the load characteristics of a series of 10 sensors is plotted, and oscillograms are presented analysis of which shows that the characteristics of the developed sensor repeat the shape of the characteristics of a strain gage. The sensor permits recording of processes taking place with frequencies to 6-8 hertz. Both the static and dynamic characteristics of the sensors are presented. A study of the static characteristics showed that on variation of the pressure from zero to 0.8 kilogram-force/cm^2, its resistance varies within the range of 100-2 kilohms.

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AA0052399 SHNEYDER A. F.

UR 0482

Soviet Inventions Illustrated, Section III Mechanical and General, Derwent, 1-76

243142 BIOELECTRIC PROSTHESIS CONTROL contains a finger control block for an artificial hand, with pressure sensor etc., is fitted with a time limit block to reduce the operator's fatigue and reduce his period of adaptation to the vibratory information on the pressure force exerted by the fingers.

22.9.67. as 1184958/31-16, SHNEYDER, A.F. and SOLOVYEV, L.S. Central Prostheses Res. Inst. (15.9.69) Bul. 16/5.5.69. Class 30d, Int. Cl. A 61f.

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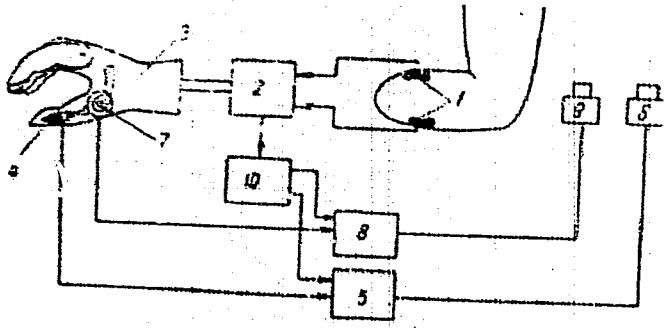
19821012

AA0052399

Shneyder, A. Yu.; Solovyev, L. S.
Tsentral'nyy Nauchno-Issledovatel'skiy Institut Protez-irovaniya i Protezostroyeniya



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19821013

USSR

UDC 531.781.2.088:681.33

LASEVICH, L. G., SHKOL'NIKOV, M. B., SHNEYDER, I. A., and ZATS, G. Ya.

"Algorithm of Primary Processing of Results of Multiple-Point Static Strain Measuring for the Electronic Digital Computer 'Minsk-22' "

Tr. Tsentr. N.-I. Avtomob. i Avtomotor. In-ta [Works of the Central Scientific Research Automobile and Automobile Engine Institute], No 132, 1971, pp 47--61 (from Referativnyy Zhurnal, Metrologiya i Izmeritel'naya Tekhnika, No 32. Single Issue No 1, 1972, Abstract No 1.32.585, Resume)

Translation : The algorithm of the program of automated processing of results of multiple-point static strain measuring on the electronic digital computer Minsk-22 is analyzed. In the discussed program is realized a complex of mathematical and logical actions on readings of the tensometer by strain measuring of constructions. The automated processing permits: a). to calculate the magnitude of stresses recorded by each strain gage; b). to

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USSR

LASHVICH, L. G., et al., Tr. Tsentr. N.-I. Avtomob. i Avtomotor. In-ta, No 132, 1971, pp 47-61

show and to compensate roughly erroneous measurements with consigned fiducial probability; c). to rate the source of insufficient accuracy of strain measuring with assigned fiducial probability; d). to calculate the rating of mathematical expectation of stresses recorded by each strain gage; e). to calculate the fiducial interval of measured stresses. The use of electronic digital computer for processing of results of strain measuring permits to change radically the existing methods of processing. The rapid action of the electronic digital computer opens new potentialities for strain gaging and permits to carry out experiments on a higher level. Three illustr., five biblio. refs.

2/2 - 94 -

UNCLASSIFIED PROCESSING DATE--30OCT70

1/2 029

TITLE--STUDYING THE DEPENDENCE OF THE WEAR RESISTANCE OF CYLINDER SLEEVES ON THE MICRORELIEF OF THE WORKING SURFACE -U-

AUTHOR-(04)-SHNEYDER, YU.G., LEBEDINSKIY, G.G., BUNGA, G.A., GUTIN, M.YE.

COUNTRY OF INFO--USSR

SOURCE--MOSCOW, AVTOMOBIL'NAYA PROMYSHLENNOST', NO 2, 1970, PP 41-42

DATE PUBLISHED--------70

SUBJECT AREAS--MECH., IND., CIVIL AND MARINE ENGR

TOPIC TAGS--METAL ROLLING, BIBLIOGRAPHY, VIBRATION EFFECT, WEAR RESISTANCE, METAL MICROSTRUCTURE/(U)M412 ENGINE CYLINDER SLEEVE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1999/1215

STEP NO--UR/0113/70/000/002/0041/0042

CIRC ACCESSION NO--AP0123179

UNCLASSIFIED

UNCLASSIFIED PROCESSING DATE--30OCT70

2/2 029

CIRC ACCESSION NO--AP0123179

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE RESULTS OF AN EXPERIMENTAL COMPARATIVE STUDY OF THE WEAR RESISTANCE OF THE M-412 ENGINE CYLINDER SLEEVES AS A FUNCTION OF THE MICRORELIEF OF THEIR WORKING SURFACES ARE PRESENTED. A PROCEDURE IS GIVEN FOR THE ANALYTIC CALCULATION OF REGULAR MICRORELIEF PRODUCED BY THE VIBRATION ROLLING METHOD.

UNCLASSIFIED

USSR

UDC 614.3/.4.07:658.387

VIL'CHEK, M. G., SHNEYDERMAN, V. E., and EADKEVICH, V. S., All-Union Institute of the Poultry-Processing Industry, Zelenograd, Moscow Oblast

"Role of Sanitary-Epidemiological Stations in Developing and Introducing Measures Relating to the Scientific Organization of Labor"

Moscow, Gigiyena i Sanitariya, No 10, 1973, pp 93-94

Abstract: Assembly-line technology has reduced the physical element in the work process but greatly increased stress. Mechanization has improved hygienic conditions while adversely affecting the workers' psychology and physiology. The monotony of many jobs and other unfavorable psychological and physiological factors require physiological research to study the level of performance during a shift and work week in order to provide a sound basis for developing programs to minimize the impact of negative factors on labor productivity and health. Sanitary-epidemiological stations are best suited for this work because of their trained staff and equipment.

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UDC 621.539.4.01

USSR

SHNEYDEROVICH, R.M. (Moscow)

"Resistance to Low-Cycle Deformation and Destruction"

Kiev, Problemy Prochenosti, No 2, 1971, pp 21-27

Abstract: In the article are presented some basic results of experimental research in the field of low-cycle fatigue, necessary for the development of questions dealing with the theory of cyclic plasticity and strength, and methods of calculating structures for low-cycle strength. Much of the experimental research material was obtained in the Thermal Strength Laboratory of the Institute of Machine Science. Most heavily represented are full-scale and simulated low-cycle tests of vessels under pressure, and tests of some elements with stress concentration. Outstanding in this field is the USSR have been the projects of N.I. Marin and I.V. Kudryavtsev. Mention is made of the work done in the United States in this field. A survey is given of areas covered in this research, and of the areas in which more work needs to be done. Emphasis is placed upon the need for developing approximate and simplified methods in the calculation of structural elements for low-cycle strength, in which extensive use is made of experimental data and experimental methods of testing the strength of structural elements. 7 figures, 16 bibliographic entries.

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1/2 017 UNCLASSIFIED PROCESSING DATE--27NOV70
TITLE--SHAFTS AND AXLES. DESIGN AND CALCULATION -U-

AUTHOR-(04)-SERENSEN, S.V., GROMAN, M.B., KOGAYEV, V.P., SHNEYDEROVICH, R.M.
COUNTRY OF INFO--USSR

SOURCE--(VALY I OSI. KONSTRUIROVANIYE I RASCHET) 2ND ED. MOSCOW, MASHINOSTROYENIYE, 1970, 318 PP
DATE PUBLISHED-------70

SUBJECT AREAS--MECH., IND., CIVIL AND MARINE ENGR

TOPIC TAGS--SHAFT, STRESS, MATHEMATIC EXPRESSION, MECHANICAL STRENGTH, STRUCTURAL ENGINEERING

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--3003/1701 STEP NO--UR/0000/70/000/000/0001/0318

CIRC ACCESSION NO--AM0130570

UNCLASSIFIED

2/2 017 UNCLASSIFIED PROCESSING DATE--27NOV70

CIRC ACCESSION NO--AM0130570

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. TABLE OF CONTENTS: INTRODUCTION 3. CHAPTER 1. LOADS RECEIVED BY SHAFTS AND AXLES 9. 2. STRUCTURAL SHAPES AND MATERIALS OF SHAFTS AND AXLES 37. 3. DETERMINATION OF INTERNAL FORCES AND NOMINAL STRESSES 67. 4. CALCULATION OF STATIC STRENGTH AND ENDURANCE 89. 5. RIGIDITY OF SHAFTS 119. 6. CHARACTERISTICS OF CALCULATION OF MULTIBEARING SHAFTS AND CRANKSHAFTS 144. 7. PROBABILITY METHODS FOR CALCULATION OF STRENGTH OF SHAFTS AND AXLES UNDER VARIABLE LOADS 172. 8. CALCULATION O$ SIMPLE SHAFTS 248. 9. CALCUALTIONS OF COMPLEX SHAFTS 264. CONCLUSION 312. THE BOOK DEALS WITH CONTEMPORARY METHODS FOR CALCULATION OF STRENGTH AND RIGIDITY OF SHAFTS AND AXLES. IT WAS WRITTEN FOR DESIGNERS.

UNCLASSIFIED

SHNEYER, V. S. Geomagnetic research

SHNEYER, V. S. -- identified as a Junior Scientific Worker, Arctic and Antarctic Scientific Research Institute, Leningrad, 1960.

SO: Byulleten' Sovetskoy Antarkticheskoy Ekspeditsii, No. 22, 1960, pp 51-52, UNCL

1/2 019 UNCLASSIFIED PROCESSING DATE--16OCT70

TITLE--CYTOCHEMICAL STUDY OF THE PHAGOCYTOSIS OF QUARTZ DUST UNDER THE EFFECT OF HYDROCORTISONE -U-

AUTHOR-(02)-RAYKHLIN, N.T., SHNYDMAN, I.M.

S

COUNTRY OF INFO--USSR

SOURCE--BYULLETEN' EKSPERIMENTAL'NOY BIOLOGII I MEDITSINY, 1970, VOL 69, NR 5, PP 106-108

DATE PUBLISHED--------70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--WHITE RAT, PERITONEUM, MITOCHRONDRION, DEHYDROGENASE, PHOSPHATASE, PHAGOCYTOSIS, HYDROCORTISONE, LUNG, RESPIRATORY SYSTEM DISEASE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1998/0199 STEP NO--UR/0219/70/069/005/0106/0108

CIRC ACCESSION NO--AP0120897

UNCLASSIFIED

2/2 019 UNCLASSIFIED PROCESSING DATE--16OCT70

CIRC ACCESSION NO--AP0120897

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. IN ALBINO RATS 24, 48 AND 72 HOURS AFTER INJECTION INTO THE PERITONEAL CAVITY OF 100 MG OF QUARTZ DUST WITH THE AID OF CYTOCHEMICAL REACTIONS TO SOME MITOCHONDRIAL (NAD,DIAPHORASE AND SUCCINIC DEHYDROGENASE) AND LYSOSOMAL (ACID PHOSPHATASE) ENZYMES THE AUTHORS INVESTIGATED THE PHAGOCYTOSIS OF THE LATTER IN CONDITIONS OF ADDITIONAL EFFECT OF HYDROCORTISONE. ON THE BASIS OF THE DATA DERIVED A SUPPOSITION IS SET FORTH TO THE EFFECT THAT HYDROCORTISONE IS, APPARENTLY, CAPABLE TO STABILIZE LYSOSOMAL AND MITOCHONDRIAL MEMBRANES AND THUS DELAY THE DEATH OF CONIOPHAGE. THE MATERIAL IS DISCUSSED IN THE LIGHT OF PREVIOUSLY OBTAINED RESULTS ON THE INHIBITING INFLUENCE OF HYDROCORTISONE ON COLLAGENOGENESIS IN THE LUNGS IN EXPERIMENTAL SILICOSIS AND THE DATA OF OTHER AUTHORS CONCERNING CERTAIN OTHER MECHANISMS OF HYDROCORTISONE EFFECT ON THE CELL. FACILITY: INSTITUTE OF EXPERIMENTAL AND CLINICAL ONCOLOGY OF THE ACADEMY OF MEDICAL SCIENCES OF THE USSR, MOSCOW. FACILITY: KASAKH INSTITUTE OF INDUSTRIAL HYGIENE AND OCCUPATIONAL DISEASES.

UNCLASSIFIED

USSR UDC 615.471:616.831-073.97-071

SHNEYDEROV, V. S., Leningrad Electrotechnical Institute imeni V. I. Ul'yanov (Lenin)

"An Instrument for Determining the Correlation Coefficients of Brain Biopotentials"

Moscow, Meditsinskaya Tekhnika, No 5, Sep/Oct 70, pp 28-32

Abstract: Simple, specialized equipment has been developed which can be employed in any neurophysiological laboratory or clinic to compute the correlation coefficients for matrices of brain biopotentials in a real-time scale. A mutual sign correlation function can be used to express the degree of interrelationship of brain biopotentials. A specialized computer is described which makes it possible either to obtain coefficients of the sign correlation or to directly obtain the correlation coefficients.

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Acc. Nr.: AP0042628 S Ref. Code: UR9067
JPRS 50162

Symposium on Climatology at the Main Geophysical Observatory

(Abstract: "Anniversary Symposium of the Main Geophysical Observatory on Problems in Climatology," by B. Ye. Shneyerov; Moscow, Izvestiya Akademii Nauk SSSR, Seriya Geograficheskaya, No 2, 1970, pp 157-158)

A symposium on the problems involved in physical and theoretical climatology was held at the Main Geophysical Observatory during the period 8-9 April 1969. It was organized by the Main Geophysical Observatory in collaboration with the Scientific Council on Climatic and Agroclimatic Resources. A report by L. R. Rakipova, entitled "Patterns in the Heat Regime of the Atmosphere," was devoted to the physical formulation of numerical experiments on the theory of climate and general circulation of the atmosphere. The author criticized work done abroad on the numerical modeling of general circulation of the atmosphere in which the quantitative description of the best-studied components of the model is given with great accuracy whereas the other components are dealt with very approximately or even totally neglected, regardless of their importance. He cited specific examples to show that such an approximate formulation of the problem can lead to erroneous ideas concerning the role of a particular factor in the investigated processes. L. S. Gandin, et al. gave some results of a nu-

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merical experiment on general circulation of the atmosphere for a hemisphere. A thermotropic model of the atmosphere was used in this work. By means of solution of the initial equations of quasigeostrophic movement by stable numercial methods it was possible to compute evolution of the temperature and pressure fields at the mean level for 100 days in advance and study the change in mean kinetic and potential energy. G. P. Kurbatkin dealt with a study of the mechanism of the dynamics of planetary waves isolated by means of harmonic analysis of the geopotential, temperature and cloud cover fields. He described the characteristic features of the development of ultralong waves and especially the presence of a nonstationary component in them, leading to a slow westward displacement of the wave from its normal position with a subsequent relatively rapid return motion to the east. In a report by M. I. Yudin it was noted that the description of climate includes not only determination of the mean values of meteorological elements in time, but also the standard deviations. M. I. Budyko discussed the climate-forming role of ice in the polar basin. On the basis of an analysis of the heat balance and the conditions for transformation of air masses in Arctic regions it was demonstrated that an ice-free regime is possible in these regions but that it is unstable because the temperature of the ocean surface is close to the melting point of sea ice. The continuous increase in the energy arriving in the atmosphere from sources associated with human

activity can cause a change in the ice regime of the Arctic and the earth's climate as a whole. K. S. Shifrin described investigations of the aerosol attentuation of radiation fluxes in the atmosphere. He estimated the effect of the dust content in the stratosphere on the radiation fluxes in the atmosphere both for a model of a thin dust cloud localized in the stratosphere and for the case of a unifrom dust distribution in the entire thickness of the atmosphere. It was demonstrated that in both cases the attenuation of total radiation is dependent on the composition and size of dust particles and can be 25 percent of the attentuation of direct radiation. Stratospheric dust content has a lesser effect on long-wave radiation. K. Ya. Kondrat'yev, in a paper entitled "Satellite Radiation Climatology and the Theory of Climate," dealt with the numerical modeling of global atmospheric processes. The speaker pointed out that the main problem in formulating this type of model is the physical formulation. The recent development of new observation methods with balloons, aircraft and meteorological satellites has introduced new corrections into current ideas concerning the principal characteristics of the heat regime of the atmosphere such as the solar constant and the earth's planetary albedo. The author plans to organize an experiment for studying nonadiabatic factors affecting large-scale movements in the atmosphere.

1/2 025 UNCLASSIFIED PROCESSING DATE--13NOV70

TITLE--ACCELERATED METHODS FOR DETERMINING THE ENDURANCE LIMIT OF ALUMINUM ALLOYS -U-

AUTHOR-(03)-DERYAGIN, G.A., SHTOVBA, YU.K., SHNEYEROVA, E.I.

COUNTRY OF INFO--USSR

SOURCE--PROBLEMY PROCHNOSTI, VOL. 2, APR. 1970, P. 11-17

DATE PUBLISHED----APR 70

SUBJECT AREAS--MATERIALS, METHODS AND EQUIPMENT

TOPIC TAGS--TEST METHOD, ALUMINUM ALLOY, FATIGUE TEST/(U)D16T ALUMINUM ALLOY, (U)AV ALUMINUM ALLOY, (U)D1 ALUMINUM ALLOY, (U)AK4-1 ALUMINUM ALLOY

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--2000/0110 STEP NO--UR/3663/70/002/000/0011/0017

CIRC ACCESSION NO--AP0123842

UNCLASSIFIED

2/2 025 UNCLASSIFIED PROCESSING DATE--13NOV70
CIRC ACCESSION NO--AP0123882
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. EVALUATION OF THE MOST RELIABLE ACCELERATED METHODS FOR DETERMINING THE ENDURANCE LIMIT OF ALUMINUM ALLOYS, D16T, AV, D1, AND AK4-1 UNDER DIFFERENT LOADING CONDITIONS. FATIGUE TESTS WERE CARRIED OUT USING SMOOTH SAMPLES AND SAMPLES WITH STRESS RAISERS. ERRORS COMMITTED IN DETERMINATION OF THE ENDURANCE LIMIT BY ACCELERATED METHODS WERE EVALUATED BY COMPARING THE RESULTS WITH THOSE OBTAINED BY CONVENTIONAL, LONG TERM METHODS.
FACILITY: VSESOIUZNYI INSTITUT LEGKIKH SPLAVOV, MOSCOW, USSR.

UNCLASSIFIED

Acc. Nr: AP0048288 Abstracting Service: CHEMICAL ABST. 5-70 Ref. Code: UR0472

S

103183c Evaluation of technological variations for refining alloy AK4 based on rapid fatigue testing. Dervagin, G. A.; Savel'eva, T. P.; Shtovba, Yu. K.; Shingerova, E. I. (USSR). *Fiz. Khim. Obrab. Mater.* 1970, (1), 155–7 (Russ). The fatigue limit was detd. for Al alloy AK4 samples, refined by 6 technological procedures, a rapid testing method which allowed the investigation of ~60 samples to be completed within 15 days with a high accuracy. The samples prepd. by vacuum refining had the best endurance properties.
V. Machacek

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REEL/FRAME 19792010

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AP0024239

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ZR9022

AUTHOR-- SHNEYE, YA., PROFESSOR, DOCTOR OF TECHNICAL SCIENCES

TITLE-- AN ATOMIC GIANT

NEWSPAPER-- SOVETSKAYA ROSSIYA, FEBRUARY 14, 1970, P 4, COLS 1-4

ABSTRACT-- A NEW 220,000-KW TURBINE, DESIGNED BY ASSOCIATES OF THE KHAR,KOV POLYTECHNIC INSTITUTE IMENI LENIN AND ENGINEERS OF THE KHAR,KOV PLANT FOR THE NOVO-VORONEZH ATOMIC POWER PLANT, HAS BEEN CONSTRUCTED.

KHAR,KOV SCIENTISTS AND DESIGNERS ARE CURRENTLY WORKING ON THE DESIGN OF A 500,000-KW TURBINE.

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UDC 002.513.5:681.3:621.3

MALININ, S.G., CHERNYAVSKIY, V.S., and SHNEYERSON, A.Z.

"Experiment in Debugging an Automated Information Retrieval System for Electrical Engineering"

Moscow, Nauchno-Tekhnicheskaya Informatsiya, Seriya 2, Informatsionnyye Protsessy i Sistemy, No 1, 1971, pp 21-25

Abstract: The Information-Reference Center for Electrical Engineering, which is part of the Department for Scientific-Technical Information of VNIIEM [Vsesoyuznyy Nauchno-Issledovatel'skiy Institut Elektromekhaniki; All-Union Scientific Research Institute of Electromechanics], is adopting the "Pusto-Nepusto-2" information retrieval system. This article describes the technological aspects of the problem of automatic indexing of documents for the system.

Today, the center already has some 150,000 secondary documents (abstracts, annotations, patents, and so on) available, and 1,000-2,000 documents are automatically indexed each week, each document requiring 50-60 seconds of machine time. However, in 1967, when debugging of the automatic indexing process was begun, although indexing and retrieval had already been turned over to the computer and 15,000 documents had been coded, attempts to cope with the regular input of as few as 100 documents a week had been unsuccessful. The reasons for this fell into three basic categories: 1) the staff's lack of understanding of

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MALININ, S.G., et al., Moscow, Nauchno-Tekhnicheskaya Informatsiya, Seriya 2, Informatsionnyye Protsessy i Sistemy, No 1, 1971, pp 21-25

the meaning of "technological process" when applied to semantic processing of information; 2) inconsistencies, lack of coordination, and lack of clear distribution of responsibility in the organizational structure of the center; and 3) psychological factors.

After giving examples of all three types of reasons, the authors discuss the steps that were taken to improve the situation. First, the center was reorganized as an independent subdivision; and second, in order to reduce the Minsk-22's downtime, reorganization and retraining of computer operators and electricians were carried out. This program was successful -- in the first six months of 1968, only 44 hours of downtime were due to machine breakdowns. Next, changes were made in the structure of the center in accordance with the following basic principles: 1) separation of experimental and routine work; 2) the organization of a dispatcher service as the core for automatic indexing. Finally, the indexing process itself was analyzed in detail and, based on this analysis, a preliminary system to process 200 documents a week was set up and then tested.

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MALININ, S.G., et al., Moscow, Nauchno-Tekhnicheskaya Informatsiya, Seriya 2, Informatsionnyye Protsessy i Sistemy, No 1, 1971, pp 21-25

The process of indexing was conceived of in terms of the processing of industrial components, and the system was organized along these lines. Every effort was made to establish psychological contact between the system and the staff using it. Therefore, losses of machine time and excessive manual labor were ignored and, instead, personnel were required to carry out each component operation slowly and with as few mistakes as possible. Another essential point that was emphasized was the need to strictly observe the production cycle: that is, to carry out an operation only on the days and at the times of day alloted to it. After this system had been thoroughly tested and mastered, a new one, intended for the processing of a larger number of documents, was set up, and so on, until the present level of competence was attained.

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BOOK

DASHUK, P. N., ZAYENTS, S. L., KOMEL'KOV, V. S. (general editor), KUCHIN-SKIY, G. S., NIKOLAYEVSKAYA, N. N., SHKUROPAT, P. I., SHNEYERSON, G. A.

TEKHNIKA BOL'SHIKH IMPUL'SNYKH TOKOV I MAGNITNYKH POLEY (Technology of High-Current Pulses and Strong Magnetic Fields), Moscow, "Atomizdat", 1970, 472 pp, illus, biblio, 2 465 copies printed

The book describes circuits, methods of calculation, characteristics and design of high-power capacitor banks and their principal elements: capacitors, dischargers of various types (vacuum, high-pressure, solid-dielectric), insulation of connectors (busbars, cables), and pulse transformers. Methods are presented for calculation of magnetic fields and inductances in solenoids and conductors. The singularities of operation of the structural elements are considered as well as the behavior of metals in superconducting fields.

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